Snohomish County:

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Scope of Assistance:

The kickoff meeting with Snohomish County staff occurred on June 20, 2005. At that meeting, County staff provided direction to the consultant team on areas of emphasis for LID regulatory assistance. These areas included:

- Provide a global strategy for implementing LID
- Review the stormwater code, 30.63
- Review the draft Critical Areas Ordinance and identify areas where LID might be incorporated
- Review Engineering Design & Development Standards

The specific technical assistance provided under this grant included:

- Developing strategies to minimize impervious surfaces that included examining the street, parking, use, height, density/dimension, and native vegetation retention/restoration standards.
- Review and recommendations on the Reduced Drainage Discharge Demonstration Program (Chapter 30.34B SCC) related to local concerns that:
  - It is applicable only to sites with a predominance of infiltrative soil types
  - In an urban setting, 60-percent forested cover or 100-percent infiltration may not be feasible
  - The code does not educate developers on LID techniques or provide technical standards for engineered LID facilities
  - Developers may consider requests for deviations onerous in terms of justification and documentation

- Preparation of a new chapter for LID projects that describes the site analysis process, provides interim recognition of LID BMPs found in the 2005 DOE Manual until Snohomish County adopts a new stormwater management manual, and establishes a minimum standard for implementation of LID BMPs
- Preparation of regulatory language that addresses ongoing access to and maintenance of LID facilities
- Review and amendment to Chapter 20.25 SCC to require a minimum standard for landscape area soils.
- Review and recommendation that the Draft Critical Areas Regulations (June 2005 draft) include bioretention as an approved BMP.

The review focused on code provisions that currently may preclude or create impediments to the implementation of LID and opportunities to include LID techniques within the code framework. Based on this review, the consultant team updated the appropriate code sections. An outline of these changes is presented below in a topical manner with the full text of the updates attached separately.

1. LID Strategy

The consultant team's review focused first on existing code that is intended to provide opportunities to implement LID. While the intent of SCC 30.34B, Reduced Drainage Discharge Demonstration Program, is clear, there are several issues that may limit its effectiveness in implementing LID. The proposed changes are intended to broaden the applicability and availability of LID techniques. These changes will recognize a wider variety of sites and uses while removing perceived hurdles to LID projects.

As an alternative to Chapter 30.63B, which will evidently sunset in 2006, the consultant team prepared a new chapter to supplement Chapter 30.63A, Drainage, for LID projects. The new Chapter serves several purposes. First, it describes the intent of LID and the available BMPs, both site design and engineering. As staff noted at the first meeting, education is important at this stage of acceptance of LID in the development community. Second, it allows developers to use the LID BMPs that DOE has approved, including the modeling credits. Until the County adopts standards equivalent to the 2005 DOE Stormwater Manual, the proposed chapter provides the nexus to specific standards that is currently lacking. Finally, it provides a minimum standard for implementation of LID BMPs. While the consultant team assumes that LID BMPs will generally be applied to reduce detention requirements or to market "green" development, implementation of LID BMPs may be considered a mitigation measure in some instances. As mitigation, a measure of compliance would be required. The proposed standards limit the capacity of conventional detention to a percentage of the 2-year storm. The standard does not prescribe the BMPs, but allows a menu approach to achieve the detention limit.

In terms of a global strategy, the proposed chapter provides education and standards. As LID BMPs gain wider acceptance in the development community and the staff develops a history with implementation and oversight of facilities, the County may wish to transition to the approach that King County has taken in requiring small-scale, dispersed facilities as the primary stormwater BMPs rather than alternative standards.

2. Code Review

Engineering Design & Development Standards

In terms of the land use and site design components of LID, the consultant team evaluated whether the code allows clustering to minimize the development envelope and whether Public Works standards can be modified to reduce the impervious surface coverage of conventional development. Areas of emphasis included issues raised by staff at the initial meeting such as parking, building height, density, tree retention, and street standards.

As a measure for general applicability, the consultant team recommends the following amendment to the landscaping requirements in SCC 20.25 to require a minimum standard for landscape area soils. Soils on any development site have the potential to infiltrate and store rainwater. Through conventional development practices, the native topsoil is removed and typically replaced with three to four inches of imported topsoil. This process results in decreased water-retention capacity of soils and requires more irrigation and fertilizer inputs to sustain plantings. The County evidently lacks a standard for restoring disturbed soils.

Chapter 30.63A SCC

LID is essentially a set of alternative BMPs. The SCC 30.63A generally addresses the thresholds for review, review process, and system requirements which are substantially the same for LID or conventional stormwater management. SCC 30.63A.170 provides for special inspections of constructed

facilities, applicable at the discretion of the Department. If the County has concerns about the construction or function of LID BMPs, this section can be used to require professional inspections and reporting. Most of the other changes were minor in nature.

Drainage (EDDS)

Staff requested that the consultant team review the EDDS with particular regard to infiltration standards. The EDDS describe conventional rather than LID BMPs and, therefore, do not address or specifically conflict with the standards for BMPs in Appendix C of Volume III of the 2005 DOE Stormwater Management Manual. Further, as proposed, the LID BMP standards referenced in proposed SCC 30.63C are intended to be alternative to those in the EDDS. The consultant team noted several distinctions between the requirements for infiltration in the EDDS and for bioretention in the DOE Manual.

Preliminary Draft Critical Areas Regulations (June 2005 draft)

As requested, the consultant team reviewed the draft CAO for potential inclusion of LID techniques. Although not explicit, the requirement in 30.62A.460 already includes potential application of LID in the 10-percent effective impervious limitation within 300 feet of specified streams. Unless such areas are highly infiltrative, LID BMPs may be necessary to achieve the maximum effective impervious standard.

In general, LID has limited applicability to critical area regulations, which typically are intended to establish natural buffers on and around sensitive slopes and habitats. LID addresses stormwater impacts but does not address other aspects of human intrusion. The consultant team was not aware of scientific documentation that would support a reduction in buffer for critical habitat areas based on the use of LID.

The only amendment recommended was to Section 30.62C.200, [CARA] Mitigation requirements – general. Part (6) addresses BMPs for managing clean runoff. Bioretention is recommended to be included as an approved BMP.